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VARIABLE STAR NOTES.

BY ROSE O'HALLORAN.

The maximum of *o Ceti,* predicted for the 25th of February last, seems to have been of moderate range, but moonlight, lingering twilight, and low altitude hindered the close estimates of its light-changes sometimes obtainable. As stated in No. 100 of the *Publications A. S. P.,* the variable was brighter than 69 *Ceti* and dimmer than *Delta* of the same constellation on January 17th, and on January 24th was still of the same luster. On the 27th and 28th it approached nearer to the light of *Delta,* and on February 2d was equal to it. February 6th it was distinctly brighter than *Delta,* and with an opera-glass seemed somewhat brighter than *Gamma.*

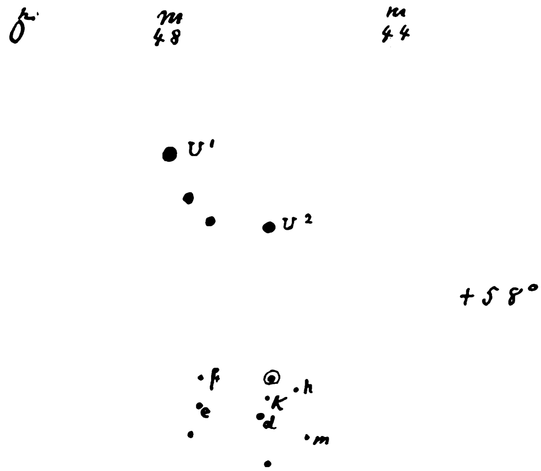
During the remainder of February it was compared with the two last-named stars, on the 7th, 12th, 21st, 23d, 25th, 28th, and on March 3d, 6th, and 8th, but no decrease was discernible before the crescent Moon interfered with satisfactory comparisons.

W Cassiopeiæ.

This variable is easily found not far south of *U^2 Cassiopeiæ,* and needs but a small instrument for observation of its variations, which are from about 8th to 12th magnitude. Its last decline from maximum to minimum was observed as follows:—

1904.

June 12. It is a magnitude or more brighter than *d.* No star of 8th magnitude is near enough for a satisfactory comparison.



Vicinity of *W Cassiopeiæ.*

June 24. Slightly decreased, but still brighter than any of the adjacent stars.

July 9, 15, 17. Equal to *d*.

July 31; Aug. 1, 11, 29. Less than *d*. Equal to *e*.

Sept. 2, 6, 12, 18. Between the light of *f* and *h*.

Sept. 27, 28. Equal to *h*.

Sept. 29; Oct. 3, 16. Less than *h*. Equal to *k*.

Oct. 19, 28. Between *k* and *m*. These two comparison-stars are scarcely of 11th magnitude, and in a four-inch lens are visible only on clear, moonless nights.

Oct. 30. Equal to *m*.

Nov. 2, 5. It seems slightly brighter than *m*.

Nov. 7, 8, 12. Equal to *m*.

Nov. 15. In moonlight barely discernible.

Nov. 27. Not discernible in slight haze. In the accompanying map the variable is the star within a small circle.

R Sculptoris.

The pink light of this southern variable made its identification easy on the 1st of last January, the date of its predicted maximum. It was about 6.8 magnitude, or a few tenths less than *Tau,* classed as 6.5 in the Argentine General Catalogue. On the meridian it was discernible in an opera-glass.

R Leonis.

As the constellation of *Leo* has a high altitude in the evening hours at this season, the approaching maximum of *R Leonis,* predicted for June 24th, should be favorably observed. The irregularity to which its mean period of 312 days is subject may hasten or retard its highest range several days. The bright phases being discernible in an opera-glass, its red gleam is easily identified in the same field of view as the two stars of about 6th magnitude, numbered 18 and 19 in FLAMSTEED'S catalogue. They are about two degrees northeast of *o Leonis.* The accompanying record shows that the variable has increased four magnitudes since January last. The magnitudes of the comparison-stars are those of the Potsdam *Publications* and the *Durchmusterung.*

1905.	
Jan. 27.	Brighter than 9.88. Less than 9.55.
Feb. 22.	Very slightly brighter than 9.05.
March 22.	Much brighter than 9.05. Nearly equal to 8.15.
March 26.	Equal to 8.15.
April 2.	No noticeable increase.
April 11.	Much brighter than 8.15, but less than 6.68. Probably not far from 7th magnitude.
April 22.	Of fully 7th magnitude. Brighter than 7.15, but not equal to 6.68.
April 25.	Equal to 6.68. Less than 5.90.
May 4.	Fully equal to 5.90. Faintly discernible with the naked eye.
May 8.	Brighter than 5.90. Less than 5.65.

SAN FRANCISCO, May 14, 1905.